

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

UNITED STATES OF AMERICA,

Plaintiff,

v.

MUSTAFA DEVILLE REYNOLDS,
aka, “J,”

Defendant.

Case No. 1:20-cr-24

Hon. Paul L. Maloney
United States District Judge

DEFENDANT’S MOTION TO EXCLUDE CELL-SITE ANALYSIS

Defendant, Mustafa Deville Reynolds, by his counsel, Sean R. Tilton, Assistant Federal Public Defender, pursuant to Federal Rules of Evidence 702 moves the Court to exclude the government’s proposed cell-site location evidence.

While cell-site location data can be used reliably in some situations, the application here is unreliable. Specifically, the proposed evidence uses cell-site data to pinpoint the location of the cell phone to a narrow geographic area—a use which has never been approved by the Sixth Circuit.

The Federal Rules of Evidence (“FRE”) require a trial court judge to ensure that an expert’s testimony is both reliable and relevant before it may be admitted. *Daubert v. Merrell Dow Pharms. Inc.*, 509 U.S. 579 (1993) (evaluating plaintiffs’ expert’s testimony that ingestion of morning sickness pills manufactured by the defendant pharmaceutical company caused limb defects in the plaintiffs). FRE 702 grants the district court the discretionary authority to determine reliability and relevancy, given the particular facts and

circumstances. *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999). This “gatekeeping” duty of the district court applies to all specialized knowledge, including, but not limited to technical and scientific knowledge. *Id.*; *see also Daubert, supra*, 509 U.S. at 589. The government must prove by a preponderance of the evidence that the technical evidence is admissible. *Daubert, supra*, 509 U.S. at 592-93; *see also Bourjaily v. United States*, 483 U.S. 171, 174 (1987) (evidentiary admissibility determinations that hinge on preliminary factual questions must be established by the proponent of the evidence by a preponderance of the evidence).

To testify “in the form of an opinion or otherwise,” an expert witness first must be qualified based on her “knowledge, skill, experience, training, or education.” FRE 702. Once qualified, for the testimony to be admitted, the rule requires:

- (a) the expert’s scientific, technical, or other specialized knowledge must help the trier of fact to understand the evidence or determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods;
- (d) the expert must have reliably applied the principles and methods to the case.

FRE 702.

Expert opinion must be based on actual knowledge, not subjective belief or unsupported speculation. *Daubert, supra*, 509 U.S. at 590. Although an expert may base an opinion on facts if “experts in the particular field would reasonably rely on those kinds of facts or data in forming an opinion,” inadmissible facts or data may be disclosed to the jury “only if their probative value in helping the jury evaluate the opinion substantially outweighs their prejudicial effect.” FRE 703. Finally, even relevant evidence must be

excluded “if its probative value is substantially outweighed” by the possibility of unfair prejudice, confusion of the issues, misleading of the jury, undue delay, wasting time, or needlessly presenting cumulative evidence. FRE 403.

The Supreme Court in *Daubert* set forth factors for a court to evaluate in determining the admissibility of scientific or expert testimony:

- (1) whether the expert’s theory or technique can, or has been, tested;
- (2) whether the theory or technique has been subjected to peer review and publication;
- (3) the known or potential rate of error of the technique or theory for a particular scientific technique and the existence and maintenance of standards controlling the technique’s operation; and
- (4) whether the theory or technique is generally accepted in the relevant scientific community.

Daubert, supra, 509 U.S. at 593-94.

However, no single factor alone is necessarily dispositive, and other factors may be relevant. *See Id.* at 593; *see also Kumho Tire, supra*, 526 U.S. at 149. The Court observed that subjection to scrutiny is a component of good science, in part because it increases the likelihood that substantive flaws in methodology will be detected. *Daubert, supra*, 509 U.S. at 593-94. “Widespread acceptance can be an important factor in ruling particular evidence admissible, and ‘[a] known technique that has been able to draw only minimal support within community may properly be viewed with skepticism.’” *Id.* at 594. Importantly, “[s]cientific conclusions are subject to perpetual revision,” and “[t]he scientific project is advanced by broad and wide-ranging hypotheses, for those that are incorrect will eventually be shown to be so[.]” *Id.* at 597.

“[N]othing in either *Daubert* or the [FRE] requires a district court to admit opinion

evidence that is connected to existing data only by the *ipse dixit* of the expert. *General Electric Company v. Joiner*, 522 U.S. 136, 146 (1997). In *Joiner*, the respondent sought to admit the testimony of expert witnesses who testified that they believed his exposure to certain materials in the workplace were “causally linked to” or “contributed to in a significant way” his cancer. *Id.* at 143. However, the district court refused to admit the evidence, finding that the reports upon which Joiner’s experts had relied involved “isolated studies of laboratory animals” – namely, infant mice – who had had massive doses of the chemicals injected directly into their bodies. *Id.* at 143. The Supreme Court observed that while “[t]rained experts commonly extrapolate from existing data,” in *Joiner*, the analytical gap between the data and the opinion proffered was simply too great. *Id.* at 147.

Finally, a district court has broad discretion to ensure that evidence is presented to the jury in an effective and efficient manner. *See* FRE 611(a). A trial results in a “binding legal judgment—often of great consequence—about a particular set of events in the past.” *Daubert, supra*, 509 U.S. at 597. The rules of evidence apply with equal force to questions of admissibility in criminal cases, where the consequence at stake is a wrongful conviction and attendant sentence.¹ Although “[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence,” *Id.* at 596, sometimes, clear effective presentation to the jury will be impossible.

¹ For a survey of jurisprudential trends in the denial of criminal defendants’ post-*Daubert* challenges to prosecution evidence, including DNA evidence, *see* Risinger, D. Michael, “Navigating Expert Reliability: Are Criminal Standards of Certainty Being Left on the Dock?” 64 *Albany L. Rev.* 99, 125-28 (2000).

1. *The government's proposed use of cell-site data is not reliable.*

Whether cell-site location analysis is reliable depends on its intended use. Mr. Reynolds has retained Konstantinos “Gus” Dimitrelos as an expert witness on historical cell-site location data. *See* (Attachment A, Gus Dimitrelos Curriculum Vitae). Mr. Dimitrelos will testify that there are only two reliable ways to use cell-site data to make conclusions about the location of the cellular phone.

First, at a great enough geographic distance, cell-site data can show direction of travel. For example, in *United States v. Pembroke*, 876 F.3d 812, 824 (6th Cir. 2017), *cert. granted, judgment vacated sub nom. Johnson v. United States*, 138 S. Ct. 2676 (2018), the government used cell-site location data to show that the defendants traveled from Philadelphia to Grand Rapids, Detroit, and New Buffalo before returning to Philadelphia. *Id.* at 824 n.16. “A cell phone could connect to a tower as much as seven miles away, but obviously a phone in Philadelphia would not connect to a tower in Michigan, nor would a phone in Grand Rapids connect to a tower in Detroit (150 miles away).” *Id.* at 825.

Second, cell-site data can be used to exclude the possibility that the phone is located in a specific area. For example, in *United States v. Reynolds*, 626 F. App’x 610, 617 (6th Cir. 2015), the government did not use cell-site analysis to “pinpoint a call’s origin to a specific cell-sector.” 626 F. App’x at 617. Instead, the government used cell-site data to exclude the possibility that the callers were in a specific area. *Id.* As the Sixth Circuit stated:

Rather than placing any of the four callers at a specific sector, Agent Hess sought to exclude each of them from the sector in which the Reynolds residence was located by showing that their calls connected to cell towers

that were far away from the residence. While the assumption that every call connected to the nearest tower may (or may not) require “too great an analytical gap between the data and the opinion proffered,” see *Joiner*, 522 U.S. at 146, 118 S. Ct. 512, it is reliable to assume that a call would not connect to a tower that was many sectors away.

626 F. App’x at 617.

However, there is no other reliable method to draw conclusions about the location of a cell phone from cell-site data. The fact that a cell phone connected to a cell tower shows that it was within the tower’s maximum range.² However, there is no reliable method to map the reach of a particular cell tower sector, as the government’s proposed exhibits purport to do. Likewise, there is no reliable method for estimating the probability that the cell phone was located in that mapped out area.

This method of “estimat[ing] the range of certain cell sites based on a tower’s location to other towers” is sometimes referred to as “granulization.” *United States v. Evans*, 892 F. Supp. 2d 949, 955 (N.D. Ill. 2012). “Granulization theory has not been subject to scientific testing or formal peer review and has not been generally accepted in the scientific community.” *Id.* at 956.

When a cell phone user makes a call, the phone generally “connect[s] to the cell site with the strongest signal,” although “adjoining cell [towers] provide some overlap in coverage.” While the proximity of the user is a significant factor in determining the cell tower with which the cell phone connects, it is not the only one. Other factors include the towers’ technical aspects, including geography and topography, the angle, number, and directions of the antennas on the sites, the technical characteristics of the relevant phone, and “environmental and geographical factors.”

² Network engineers typically describe this range as 10 miles. However, in his prior case work, Mr. Dimitrelos has seen a cell phone connect to a tower 11 miles away.

United States v. Hill, 818 F.3d 289, 295-96 (7th Cir. 2016) (internal citations omitted).

Accordingly, courts have “caution[ed] the government not to present historical cell-site evidence without clearly indicating the level of precision—or imprecision—with which that particular evidence pinpoints a person’s location at a given time.” *Hill*, 818 F.3d at 299 (7th Cir. 2016). For example, in *Hill*, the Seventh Circuit held that the expert’s disclaimers on the limits of cell-site analysis “saved” his testimony. 818 F.3d at 298. In that case, Seventh Circuit determined that the cell-site analysis was reliable only to show that “that at 11:54 am on November 19, 2011, Hill was within a five-mile radius of the cell tower located 11 miles east of the Credit Union.” 818 F.3d at 298. The court noted that this evidence was “somewhat helpful to the trier of fact—even if not *that* helpful.” *Id.*

In this case, the government’s proposed exhibits map out areas that are far smaller than a five-mile radius. No reliable methodology supports these exhibits. Instead, the government should be limited to presenting the location of the relevant cell towers, along with the maximum range of each tower.

The government’s exhibits rely on an assumption that the cell phone in question connected to the nearest tower. This assumption is unfounded. For example, the call detail records in this case show a phone connecting to a tower, and then six seconds later connecting to a different tower a mile away. (Attachment B, Excerpt of Call Detail Records). Mr. Dimitrelos will testify that this is not unusual.

Although several district courts have admitted more specific cell-site data, their *Daubert* analysis has serious flaws. *Reynolds*, 626 F. App’x at 616. “These courts relied primarily on other federal courts’ acceptance of historical cell-site tracking to conclude that

the technique is reliable However, ‘judges are not scientists and do not have the scientific training that can facilitate the making of [scientific] decisions’ For this reason, *Daubert* identified the ‘scientific community,’ rather than federal courts, as the relevant group in which acceptance is an indicator of a technique’s reliability.” *Reynolds*, 626 F. App’x at 616 (citations omitted).

For example,

United States v. Schaffer, [the leading district court opinion admitting this evidence] concluded that using historical cell-site tracking analysis to determine a person’s past whereabouts was reliable because the technique was “neither untested nor unestablished.” 439 Fed.Appx. at 347. But it reached this conclusion on the basis of testimony that the technique had been tested and accepted by the law-enforcement community, and not the scientific community. An FBI expert testified that the “FBI had been successful at least 1000 times” in locating suspects with historical cell-site tracking. *Ibid.* This claim appears to be precisely the sort of “ipse dixit of the expert” testimony that should raise a gatekeeper’s suspicion. *See Joiner*, 522 U.S. at 146, 118 S. Ct. 512. While being successfully employed “1000 times” may sound impressive, the claim is not subject to independent peer review and fails to establish an error rate with which to assess reliability because there was no information on how many times the technique was employed unsuccessfully.

The *Schaffer* court also concluded that “the technique has been accepted by approximately [sic] federal courts.” 439 Fed.Appx. at 347. But the two federal cases it cited—*Sepulveda*, 115 F.3d at 891, and *United States v. Weathers*, 169 F.3d 336 (6th Cir.1999)—do not support the proposition that historical cell-site tracking can reliably determine a caller’s location. At a sentencing hearing where the court’s gatekeeper function under Rule 702 was not triggered, *Sepulveda* rejected historical cell-site data as an unreliable indicator of the cell sector from which a call originated. 115 F.3d at 891; Fed.R.Evid. 1101(d)(3). And *Weathers* simply did not involve the use of historical cell-site data to estimate a person’s past location in any way.

Reynolds, 626 F. App’x at 616–17 (6th Cir. 2015).

Other district courts have relied on the principle that “using call records and cell

tower data to determine the general location of a cell phone at a specific time is an accepted methodology” without carefully limiting the proposed evidence. *See, e.g. United States v. Bailey*, No. 15-20652-04, 2018 WL 1475284, at *3 (E.D. Mich. Mar. 26, 2018). It is true that at a sufficiently general level, cell-site data can determine the general location of a cell phone. But this general location is a minimum of several miles in distance. *Pembroke*, 876 F.3d at 824 (“the calls established that the phone owners (from Philadelphia) were in the proximity of Medawar Jewelry (Plainfield Township, Michigan, near Grand Rapids) at noon, Tapper's jewelry store (West Bloomfield Township, Michigan, near Detroit) at 5:00 p.m., and New Buffalo, Michigan, the night before. At this level of geographic distance, cell-site analysis is established as reliable.”); *Hill*, 818 F.3d at 298 (“the jury could reasonably and reliably infer that at 11:54 am on November 19, 2011, Hill was within a five-mile radius of the cell tower”); *Reynolds*, 626 F. App’x at 617 (allowing evidence that calls were made “10 and 15 miles away from the Reynolds residence . . . approximately 20 miles away from the residence; and . . . 6 to 8 miles away” to show that callers were not at the residence). Because the government’s proposed exhibits use much smaller “general locations,” they are distinguishable. Because no reliable method supports this evidence, it must be excluded.

Respectfully submitted,

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